

Claims:

1. A wear assembly comprising a support structure, a wear member mounted on the support structure and a lock releasably securing the wear member on the support structure, the support structure and the wear member cooperatively defining an opening for receiving the lock, the lock comprising a wedge, the wedge being formed with a first thread formation that is threadedly coupled to a second thread formation in the opening such that rotation of the wedge moves the wedge into the opening to tighten the lock in the opening.

2. A wear assembly in accordance with claim 1 wherein the first thread formation on the wedge is defined by a helical groove.

3. A wear assembly in accordance with claim 2 wherein the groove has a large pitch so that a substantial portion of the exterior surface of the wedge exists between each pair of turns of the groove to provide a bearing surface for the lock.

4. A wear assembly in accordance with claim 1 further comprising a spool fit between the wedge and a rear wall of the opening, the wedge being movable along the spool as the wedge is tightened in the opening.

5. A wear assembly in accordance with claim 4 wherein the first thread formation on the wedge is defined by a helical groove.

6. A wear assembly in accordance with claim 4 wherein the second thread formation in the opening is formed on the spool as at least one projection to engage the groove.

7. A wear assembly in accordance with claim 6 further including a latch for holding the lock in a tightened condition in the opening.

8. A wear assembly in accordance with claim 7 wherein the wedge includes a series of teeth and the latch includes a resiliently biased detent to engage the teeth.

9. A wear assembly in accordance with claim 8 wherein the teeth are formed in the groove.

10. A wear assembly in accordance with claim 9 wherein the engagement of the detent with the teeth permits rotation of the wedge in only one direction.

11. A wear assembly in accordance with claim 7 wherein the latch is mounted on the wear member.

12. A wear assembly in accordance with claim 7 wherein the latch is mounted on the spool.

13. A wear assembly in accordance with claim 4 wherein the spool engages the wear member and the wedge engages the support structure.

14. A wear assembly in accordance with claim 4 wherein the spool has a generally C-shaped configuration that includes a body and a pair of arms.

15. A wear assembly in accordance with claim 4 further including an insert that engages the wedge opposite the spool.

16. A wear assembly in accordance with claim 4 wherein the first thread formation is a helical ridge and the second thread formation is a groove structure.

17. A wear assembly in accordance with claim 16 further including an insert that engages the wedge opposite the spool.

18. A wear assembly in accordance with claim 17 wherein the insert includes a groove structure to receive the helical ridge.

19. A wear assembly in accordance with claim 4 wherein the spool is integrally formed with the wear member.

20. A wear assembly in accordance with claim 19 wherein the spool and the wear member are cast as a one-piece member.

21. A wear assembly in accordance with claim 4 further including a cradle to contact the wedge along a side opposite the spool, the cradle having a front surface that is curved generally about a transverse axis to better accommodate shifting of the vertical orientation of the lock during use.

22. A wear assembly in accordance with claim 21 further comprising an insert between the front of the opening and the cradle, the insert having a rear surface that complements the front surface of the cradle.

23. A wear assembly in accordance with claim 21 wherein the front face of the cradle includes a curved concave surface generally about the transverse axis.

24. A wear assembly in accordance with claim 21 wherein the front face of the cradle includes a curved convex surface about the transverse axis.

25. A wear assembly in accordance with claim 21 wherein the front face of the cradle has curved portions that are offset relative to each other.

26. A wear assembly in accordance with claim 1 wherein the wear member is a point and the support structure is an adapter that attach together to form an excavating tooth.

27. A wear assembly in accordance with claim 1 wherein the wear member is an adapter and the support structure is a lip of an excavating bucket.

28. A wear assembly in accordance with claim 1 further including a latch assembly for holding the lock in a tightened condition in the opening.

29. A wear assembly in accordance with claim 1 wherein the first thread formation is a tapping thread.

30. A wear assembly in accordance with claim 1 further comprising means for effecting shifting of the vertical orientation of the wedge as the legs of the wear member shift longitudinally on the lip.

31. A wear assembly in accordance with claim 1 further including a cradle to contact the wedge along a front side thereof, the cradle having a front surface that is curved generally about a transverse axis to better accommodate shifting of the vertical orientation of the lock during use.

32. A wear assembly in accordance with claim 31 further comprising an insert between the front of opening and the cradle, the insert having a rear surface that complements the front surface of the cradle.

33. A wear assembly in accordance with claim 31 wherein the front face of the cradle includes a curved concave surface generally about the transverse axis.

34. A wear assembly in accordance with claim 31 wherein the front face of the cradle includes a curved convex surface generally about the transverse axis.

35. A wear assembly in accordance with claim 31 wherein the front face of the cradle has curved portions that are offset relative to each other.

36. A wear assembly comprising a support structure, a wear member mounted on the support structure and a lock releasably securing the wear member on the support structure, the support structure and the wear member cooperatively defining an opening

for receiving the lock, the lock comprising a wedge movable into the opening to tighten the lock in the opening, and a cradle fit between the wedge and the front of the opening, the cradle having a curved front surface generally about a transverse axis to fit against a complementary surface in the opening to effect shifting of the vertical orientation of the wedge as the wear member shifts longitudinally on the lip during use.

37. A wear assembly in accordance with claim 36 further comprising an insert between the front of the opening and the cradle, the insert having a rear surface that complements the front surface of the cradle.

38. A wear assembly in accordance with claim 36 wherein the front face of the cradle includes a curved concave surface generally about the transverse axis.

39. A wear assembly in accordance with claim 36 wherein the front face of the cradle includes a curved convex surface generally about the transverse axis.

40. A wear assembly in accordance with claim 36 wherein the front face of the cradle has curved portions that are offset relative to each other.

41. A wear member adapted to mount on a support structure fixed to excavating equipment, the wear member comprising a front working portion, a rearward formation for receiving a support structure, an opening for receiving a rotatable lock to releasably hold the wear member to the support structure, and a latch provided in a wall portion of the opening to hold the lock in the opening, the latch having a tooth to cooperate with a set of teeth on the lock to prevent rotation of the lock in one direction in the opening.

42. A wear member in accordance with claim 41, wherein the latch has a body with a detent to engage a complementary series of ratchet teeth on the lock, and a resilient member to bias the detent toward the teeth.

43. A wear member in accordance with claim 42 wherein the detent is formed on a ridge that is configured as a helical segment.

44. A wear member in accordance with claim 43 wherein the wear member is a point of an excavating tooth with the front working portion including a digging edge and the rearward formation including a socket for receiving an adapter nose.

45. A wear member adapted to mount on a support structure fixed to excavating equipment, the wear member comprising a front working portion, a rearward formation for receiving a support structure, and an opening for receiving a rotatable lock to releasably hold the wear member to the support structure, the opening including a threaded formation adapted to mate with threaded formation on the lock.

46. A wear member in accordance with claim 45 wherein the threaded formation includes a projection adapted to be received in a helical groove in the lock.

47. A wear member in accordance with claim 46 wherein the threaded formation includes at least one helical ridge adapted to be received in a helical groove in the lock.

48. A wear member in accordance with claim 45 further including a latch that is biased toward the lock, the latch including the threaded formation.

49. A wear member in accordance with claim 48 further comprising a spool that projects outward from a rear end of the opening to form a rear surface of the opening to engage the lock.

50. A wear member in accordance with claim 49 wherein the spool includes a trough for receiving a lock having a curved configuration.

51. A wear member in accordance with claim 50 wherein the trough includes the threaded formation.

52. A wear member in accordance with claim 51 wherein the threaded formation includes a plurality of spaced helical ridge segments adapted to engage a threaded groove on the wedge.

53. A method of attaching a wear member to a support structure comprising placing the wear member on the support structure such that formations in the wear member and the support structure cooperatively define an opening, inserting a wedge having a first thread formation into the opening and threadedly engaging a second thread formation in the opening, rotating the wedge to drive the wedge into the opening to tightly retain the wear member on the support structure.

54. A method in accordance with claim 53 further comprising inserting a spool into the opening the spool having the second thread formation to threadedly engage the wedge.

55. A method in accordance with claim 54 further including latch assembly to secure the wedge in a tightened condition.

56. A method in accordance with claim 53 further including latch assembly to secure the wedge in a tightened condition.